Amendments to the Specification

1) page 15, before the text starting with: "While the invention has been particularly shown and described, etc", this text immediately preceding the claims of the invention, please enter the following new text. This new text is a summary and copy of the existing claims and does therefore not introduce new matter. This new text is provided to assure that matter contained in the claims of the invention is described in the specification of the invention.

The invention, which provides a method of forming a device structure that combines insulating materials for alignments posts and optical interference layers associated with an active device structure in a silicon body, can be summarized as follows:

- providing a silicon wafer having a pattern of active device structures therein and thereon
- forming a first metallic layer over the surface of said wafer
- forming a second metallic layer over said first metallic layer, which is used both for connections and for bonding pads

- forming a silicon dioxide insulation over said second metallic layer
- forming a third metallic layer over said layer of silicon dioxide
- forming a photoresist mask over said third metallic layer having a covering over planned pixel locations of said liquid-crystal-on-silicon display device
- removing said third metallic layer not covered by said photoresist mask
- removing said photoresist mask to provide that each said pixel retains said third metallic layer, which shall act as a mirror reflector for light incident upon said liquid-crystal-on-silicon display device
- depositing optical interference layers of silicon oxide or silicon nitride over said third metallic layer and said silicon dioxide layer, and
- forming said alignment posts whereby said alignment post are formed by the process of amorphous silicon by plasma etching upon said silicon substrate.

Additional steps can be provided of:

- forming an amorphous silicon layer of thickness between about 0.1 and 5 microns to achieve the desired height of the alignment posts
- forming a photoresist mask over said amorphous silicon layer to cover the location of each planned alignment post
- removing said amorphous silicon to form said alignment posts by plasma etch, and removing said photoresist mask.

The invention can first alternately be summarized as comprising the steps of:

- providing a silicon wafer having a pattern of active device structures therein and thereon
- forming a first metallic layer over the surface of said wafer
- forming a second metallic layer over said first metallic layer, which is used both for connections and for bonding pads
- forming a silicon dioxide insulation over said second metallic layer
- forming a third metallic layer over said layer of silicon dioxide

- forming a photoresist mask over said third metallic layer having a covering over planned pixel locations of said liquid-crystal-on-silicon display device
- removing said third metallic layer not covered by said photoresist mask
- removing said photoresist mask to provide that each said pixel retains said third metallic layer, which shall act as a mirror reflector for light incident upon said liquid-crystal-on-silicon display device
- depositing optical interference layers of silicon oxide or silicon nitride over said third metallic layer and said silicon dioxide layer, and
- forming said alignment posts by the process of silicon nitride by plug filling upon the silicon substrate.

The first alternate of the invention can further be expanded by:

- forming a PECVD oxide layer of thickness between 0. 1 and 5 microns to achieve the desired height of the alignment posts
- forming a photoresist mask over said PECVD oxide layer to expose the location of each planned alignment post

- forming post cavities by plasma etching of said PECVD oxide layer
- plasma enhanced chemical vapor deposition of silicon nitride into said post cavities
- etch-back removal of said silicon nitride, except that silicon nitride deposited in said post cavities
- removing the PECVD oxide layer by wet etch (such as HF or buffered HF) to form said silicon nitride alignment posts, and removing said photoresist mask.

The invention can second alternately be summarized as comprising the steps of:

- providing a silicon wafer having a pattern of active device structures therein and thereon
- forming a first metallic layer over the surface of said wafer
- forming a second metallic layer over said first metallic layer, which is used both for connections and for bonding pads
- forming a silicon dioxide insulation over said second metallic layer
- forming a third metallic layer over said layer of silicon dioxide

- forming a photoresist mask over said third metallic layer having a covering over planned pixel locations of said liquid-crystal-on-silicon display device
- removing said third metallic layer not covered by said photoresist mask
- removing said photoresist mask to provide that each said pixel retains said third metallic layer, which shall act as a mirror reflector for light incident upon said liquid-crystal-on-silicon display device
- depositing optical interference layers of silicon oxide or silicon nitride over said third metallic layer and said silicon dioxide layer and
- forming said alignment post by the process of insulation material by lift-off upon said optical interference layer OIL.

The second alternate of the invention can further be expanded by:

- depositing a two-micron bottom photoresist layer or PMMA acylic layer upon the OIL and covered by silicon monoxide via thermal evaporation, followed by another photoresist layer

- using a photomask is to form cavities in said silicon monoxide by a CF4 plasma etching of the silicon monoxide, after which the silicon monoxide serves as a mask for an oxygen plasma etching of said two-micron bottom photoresist or PMMA acylic layer
- forming an insulation material by plug filling the cavities formed in the silicon monoxide and two-micron bottom photoresist layer or PMMA acylic layer; several insulation materials are available from which to choose, including calcium fluoride, silicon monoxide, yttrium oxide, and aluminum oxide, and the like
- removing said bottom photoresist layer or PMMA acylic layer by lift-off with an ultrasonic bath, leaving said alignment posts.

The invention can third alternately be summarized as comprising the steps of:

- providing a silicon wafer having a pattern of active device structures therein and thereon
- forming a first metallic layer over the surface of said wafer

- forming a second metallic layer over said first metallic layer, which is used both for connections and for bonding pads
- forming a silicon dioxide insulation over said second metallic layer
- forming a third metallic layer over said layer of silicon dioxide
- forming a photoresist mask over said third metallic layer having a covering over planned pixel locations of said liquid-crystal-on-silicon display device
- removing said third metallic layer not covered by said photoresist mask
- removing said photoresist mask to provide that each said pixel retains said third metallic layer, which shall act as a mirror reflector for light incident upon said liquid-crystal-on-silicon display device
- depositing optical interference layers of silicon oxide or silicon nitride over said third metallic layer and said silicon dioxide layer; and
- forming said alignment post by a process of polyimide by photosensitive etching upon an Optical Interference Layer (OIL).

The third alternate of the invention can further be expanded by:

- forming a photosensitive polyimide layer of thickness between about 0.1 and 5 microns to achieve the desired height of the alignment posts
- exposing said photosensitive polyimide at the location of each planned alignment post
- developing and removing said photosensitive polyimide to leave said alignment posts in the location of the exposed polyimide described herein, and removing said photoresist mask.